## **CLAIMS**

What is claimed is:

A medical diagnostic ultrasound catheter for imaging from within a body, the catheter comprising:

a conductor;

a shaft surrounding at least a portion of the conductor: a non-conductive braid connected with the shaft; and an ultrasound transducer connected with the shaft and electrically connected with the conductor.

- 103 The catheter of Claim 1 wherein the non-conductive braid comprises a braid of mono-filament material.
- The catheter of Claim 1 wherein the non-conductive braid comprises mono-filament nylon material.
- 14. The catheter of Claim 1 wherein the non-conductive braid comprises a material selected from the group consisting of: glass, plastic, nylon and combinations thereof.
- The catheter of Claim 1 wherein the non-conductive braid is embedded within the shaft.
- The catheter of Claim 1 wherein the shaft is free of electrically conductive material.
- The catheter of Claim 1 wherein the shaft comprises a tip portion fused to a body portion, the non-conductive braid connected with the body portion.
- The catheter of Claim 1 wherein the non-conductive braid comprises a configuration selected from the group consisting of: spiral, diamond weave and combinations thereof.

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- The catheter of Claim 1 further comprising a dielectric film adjacent an emitting surface of the ultrasound transducer.
- 500 comprising:

medical diagnostic catheter for use within a body, the catheter

an electrical conductor;

a shaft surrounding at least a portion of the electrical conductor; and a non-conductive insert for providing torque transmission connected with the shaft.

- 103 The catheter of Claim 10 wherein the non-conductive insert comprises a braid of mono-filament material.
- The catheter of Claim 10 wherein the non-conductive insert is embedded within the shaft.
- $\sqrt{13}$ . The catheter of Claim 10 wherein the shaft comprises a tip portion fused to a body portion, the non-conductive insert connected with the body portion.
- The catheter of Claim 10 further comprising a dielectric film adjacent an emitting surface of a ultrasound transducer, the ultrasound transducer connected with the shaft and electrically connected with the conductor.

A medical diagnostic ultrasound catheter for imaging from within a body, the catheter comprising:

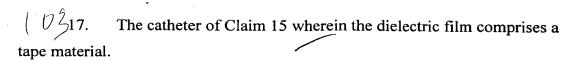
a shaft;

an ultrasound transducer connected with the shaft;

- a lens adjacent the ultrasound transducer; and
- a dielectric film adjacent the ultrasound transducer.
- The catheter of Claim 15 wherein the dielectric film is positioned 16. between the lens and the ultrasound transducer.

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The catheter of Claim 15 wherein the dielectric film comprises a polyester film.

The catheter of Claim 18 wherein the polyester film comprises

103 20. The catheter of Claim 15 wherein the dielectric film comprises a film having a thickness less than 7 microns.

 $\sqrt{21}$ The catheter of Claim 15 wherein: the shaft comprises a tip portion; the ultrasound transducer connects with the tip portion; and the dielectric film wraps around a circumference of the ultrasound transducer.

- 22. The catheter of Claim 15 wherein the dielectric film is positioned adjacent an emitting surface of the ultrasound transducer.
- $\sqrt{23}$ . The catheter of Claim 15 further comprising a non-conductive braid connected with the shaft.

A medical diagnostic ultrasound catheter for imaging from within a

a shaft

an ultrasound transducer connected within the shaft; and a dielectric film positioned between a portion of the shaft and the ultrasound transducer.

The catheter of Claim 24 further comprising a lens adjacent the ultrasound transducer, wherein the dielectric film is positioned between the lens and the ultrasound transducer.

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- $10^{\circ}$  26. The catheter of Claim 24 wherein the dielectric film comprises a polyester film.
- 10 2 27. The catheter of Claim 24 wherein the dielectric film comprises a film having a thickness less than 7 microns.
- 28. The catheter of Claim 24 further comprising a non-conductive braid connected with the shaft.

29. A medical catheter for insertion into a body, the catheter comprising:

a shaft, and

a non-conductive braid connected with the shaft to transmit torque to the shaft.

- $(6)^{2}$  30. The catheter of Claim 29 wherein the non-conductive braid comprises a braid of mono-filament material.
- \\sigma\_31. The catheter of Claim 29 wherein the non-conductive braid comprises mono-filament liquid crystal polymer material.
- √32. The catheter of Claim 29 wherein the non-conductive braid comprises a material selected from the group consisting of: glass, plastic, nylon and combinations thereof.
- √ 33. The catheter of Claim 29 wherein the non-conductive braid is embedded within the shaft.

34. The catheter of Claim 29 further comprising:
a conductor surrounded by at least a portion of the shaft; and
an ultrasound transducer electrically connected to the conductor.

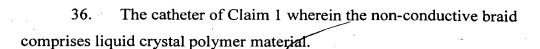
35. The catheter of Claim 29 further comprising a control within the shaft.

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37. The catheter of Claim 10 wherein the non-conductive insert comprises liquid crystal polymer material.

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